Docket No. CCCUSA 3.0-001
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Phil Bates, John R. Anderson, and
John A. Mc Dermott

Application No.: 09/179,332 Group Art Unit: N/A

Filed: October 27, 1998 Examiner:

For: MULTI-USER COMPUTER SYSTEM

Commissioner for Patents
Washington, DC 20231

DECLARATION OF PHILIP BATES

I, Philip Bates, declare and say that:

1. I am a named co-inventor in the above-identified application. I refer herein to the assignee of the present application and to various corporate entities affiliated with the assignee collectively as "C-C-C Group." I have read and am familiar with the Declaration of Mr. Kevin Morrison (hereinafter "Morrison Dec.") and the exhibits thereto (cited herein as "Morrison Dec., Ex.").

2. I make this Declaration to disclose pertinent facts pertaining to the dealings between C-C-C Group and a customer (referred to herein and in the Morrison Declaration as "Customer Corp.") located within the United States. Such dealings ultimately resulted in construction of a system within the United States. I was personally involved in development of such system and communication with Customer Corp.

3. In response to a request by Customer Corp., I prepared comments included in a facsimile dated September 29, 1996, annexed hereto as Ex. 1. Those comments were incorporated

in a further document annexed hereto as Ex. 2 sometime during late September, 1996 or early October, 1996, which I understand was communicated to Customer Corp. at the time. Those comments were intended to further clarify the functions of the proposed "Helper PC" referred to in Morrison Dec., Ex. 1.

4. After presentation of the Project Plan dated October 28, 1996 (Morrison Dec., Ex. 3), C-C-C Group designed, developed and installed at Customer Corp.'s facility within the United States a system which, as ultimately completed, became a system in accordance with at least the independent apparatus claims of the present application, and which operated in accordance with at least the independent method claims of the application.

5. The system was fully completed and operational at some time after October 27, 1997. However, as of October 26,1997 C-C-C Group had defined the features incorporated in the system being installed, substantially as set forth in U.S. Provisional Application No. 60/063,695, filed October 28, 1997, the benefit of which is claimed in the present application.

I further state that I have been warned that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and such willful false statements may jeopardize the validity of the application or any patent resulting therefrom. I state that all statements made of my own knowledge are true and all statements made on information and belief are believed to be true.

Dated: 13TH SEPTEMBER 2001

PHILIP BATES

519347 1

C-C-C

FACSIMILE MESSAGE

Date	29-9-96
Number of pages including cover sheet	6

TO:	John McDermott
Tel	688 1701
Fax	001 206 [illegible]
CC:	

FROM:	Phil Bates CCC Developments
Tel	01904431788
Fax	01904413710

REMARKS: ☐ Urgent ☐ For your review ☐ Reply ASAP ☐ Please Comment

John,

In response to your faxed comments, I will try to explain more...

1. Helper PCs

The whole purpose of the helper PC is to provide some interaction for the user before he is connected to the server of his choice. Consider the following:

i. The system is idle. The users' keyboard, mouse and monitor are connected to the matrix switch, but the matrix switch has not connected to user to anything yet.

ii. The user hits a key to activate his system. The keystroke is passed through the matrix switch to the C-C-C server.

iii. The server must now provide some sort of response. In order to initiate a session with the user, the user must be able to see something on his screen (video must be generated). This video cannot be generated by the server that will eventually be connected since that has not yet been chosen.

iv. The video must come from somewhere else - the helper PC.

v. The next free helper PC is connected by the server, through the matrix switch and the user sees and interacts with the application that is running on the helper PC. This will be a C-C-C custom written program which helps the user connect to the required server. It will probably take the form of a graphical representation of the whole system, so that users may choose their connections easily.

vi. The user selects the required system, and the helper PC sends the correct routing information to the C-C-C server, through the LAN.

vii. The C-C-C server reconfigures the matrix switch and the user is then connected to the required server. The helper PC connection is freed ready for the next login session from another user.

2. Helper PCs, therefore are just normal PC systems connected to the matrix switch and available so that a user may initially select the required connections. Obviously, a helper PC is required for each

EXHIBIT 1

simultaneous login session. The total number of helper PCs required would never exceed the number of users, but if simultaneous login sessions for every user were required then a helper PC for each user (i.e. keyboard, mouse and monitor) would be required.

3. If there were less helper PCs than users, then if all helper PCs were in use, a user would not get a response from the keyboard until a helper PC were freed. It would be advisable to start with, say, 20% helper PCs (i.e 60 for 300 users) and monitor user responses. If users started to complain about initial login response times, then extra helper PCs could be added with no modifications to the system (apart from extra input cards)
4. If a user has a PC at the desk, then this is effectively his helper PC (it can run the same C-C-C application) and no helper PC for that user would be required.
5. In summary, if we have a system with 300 users (i.e. 300 video screens), with 160 of those having a PC at the desk, then a maximum of 160 helper PCs would be required. If the switch had 700 real inputs (i.e a choice of 700 servers) then 850 server inputs would be required (700 real + 150 helpers).

I hope that explains some of it - I have also attached some diagrams, and will answer your points (your numbering) below to further clarify...

1.3.1 When the user is logging in, he is running a custom C-C-C application which will instruct the matrix switch. The matrix switch is controlled by the C-C-C server, and this communicates with the application over the LAN. The choice of response if the user does not finish his login session is entirely up to us. Probably, there will be a timeout on user response. If the user does not press a key for a specified time, the application will terminate, and in doing so will instruct the matrix switch (through the C-C-C server) to disconnect the helper PC.

1.3.2 I would envisage that a logon will be quite short. The user merely enters some kind of authorisation code and selects the required server from a graphical 'map'. I would suggest this could easily be accomplished in 10-20 seconds.

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6. **Response times**

The keyboard and mouse data and sent between the desktop and the switch using the standard FreeDesk protocol. This is 4800 baud, half duplex. This speed guarantees the same response time as a directly connected keyboard and mouse. This must be routed through the matrix switch with no degradation in throughput if we are to achieve the same response as a directly connected system. Since there are 84 users connected to a single high speed link (16:1 multiplex on the user card, 4:1 multiplex on the control card), then the bit rate of the high speed link must be at least 64*2400 = 153600. A slight reduction in response times would allow us a speed of 115200, which is a standard serial speed for a PC. This would allow us to use standard serial port cards in the C-C-C server for keystroke monitoring.

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The helper PC only needs to run the custom C-C-C login application and communicate with the C-C-C server over the LAN. I would suggest we use a 486DX100, 8Mbyte RAM, network boot and load or similar single card computer, mounted in a passive backplane chassis. Each chassis is 4U high and would hold 8PCs (+8 network cards). For 140 helpers we would need 72U of cabinet space (i.e. 18 chassis). Unfortunately, I do not have prices, but would anticipate approx cost of $1000 each.

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I'm not sure about this. The server does not have to work very hard most of the time (the configuration of the system is relatively static), but would have to guarantee response time at peak usage. It's main task is to

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patch *x y*

where x is the input channel (i.e. server number) and y is the user number. All other layers on top of this (graphical mapping etc) are handled by the server.

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Give me a call to discuss this when you've got it.

Best Regards,

Phil.

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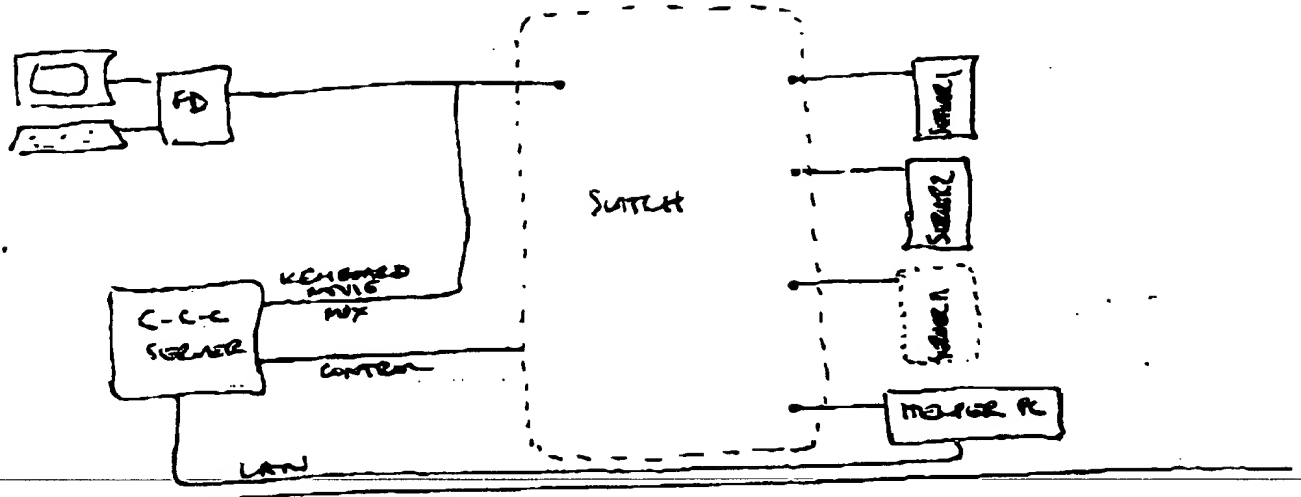
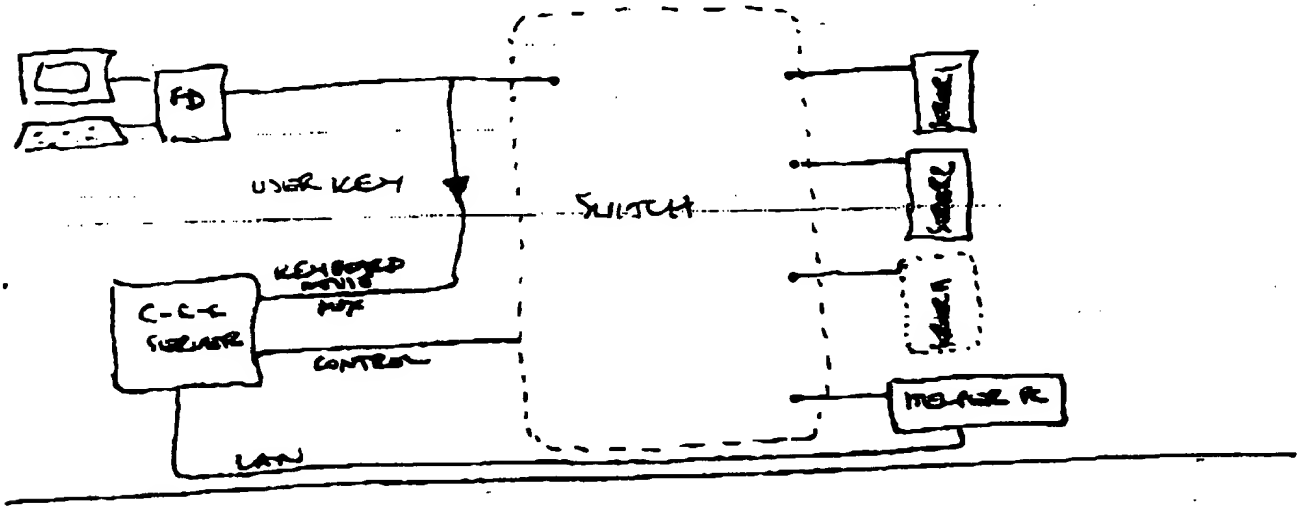
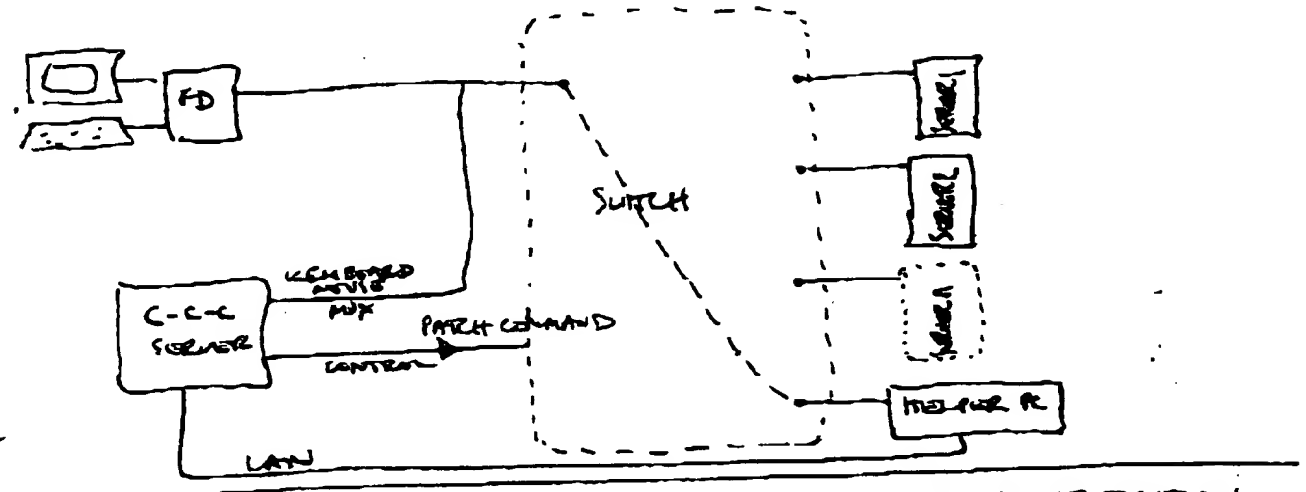


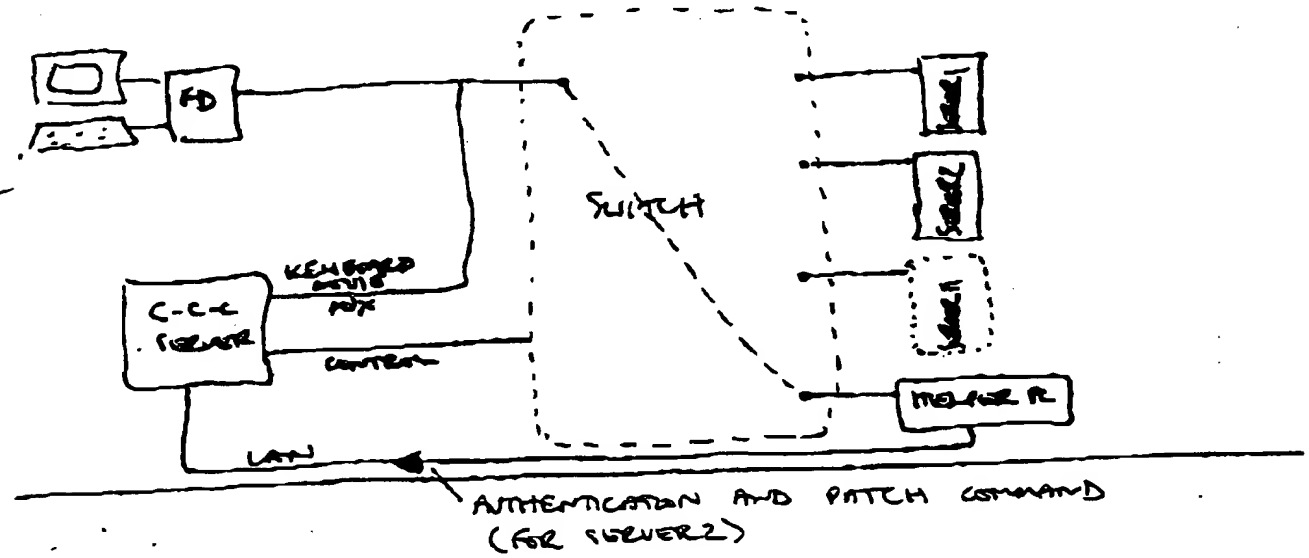
② USER PRESSES KEY



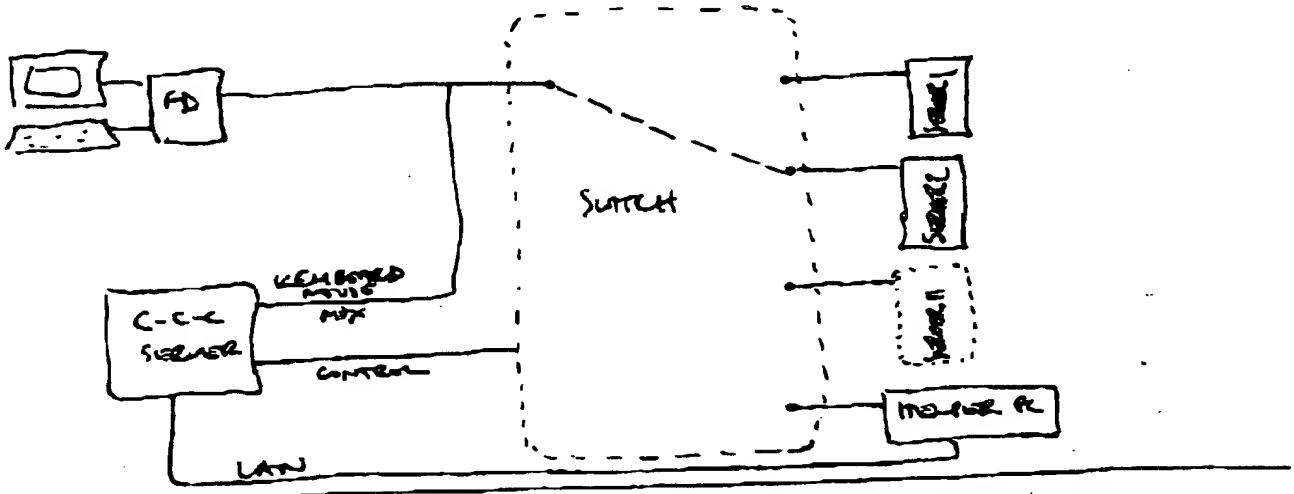
③ SERVER CONNECTS HELPER PC



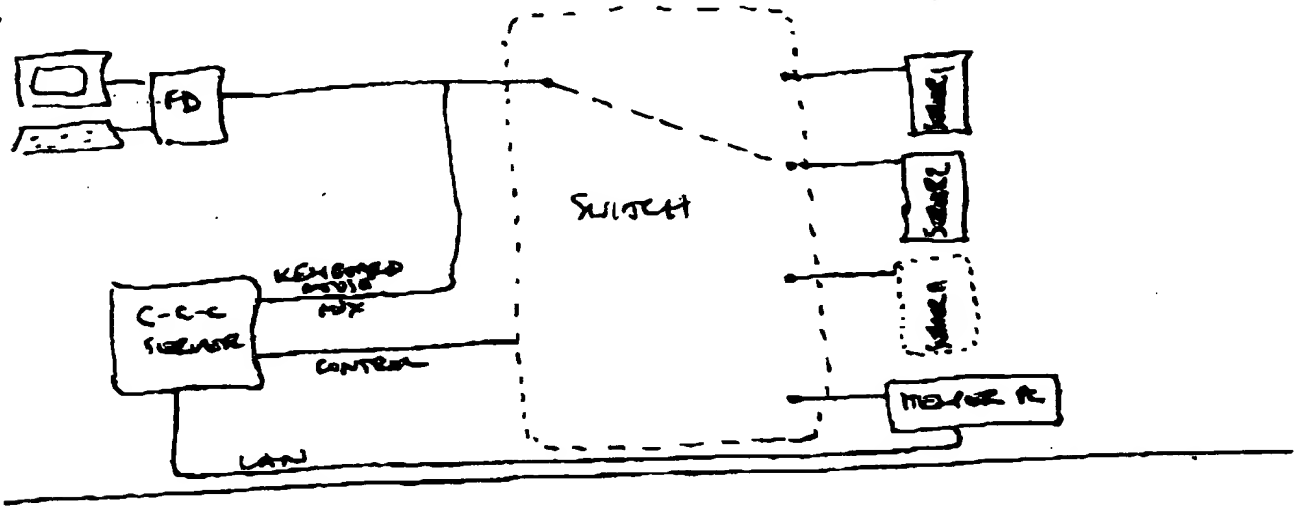
④ USER LOGS ON USING HELPER PC, HELPER SENDS AUTHENTICATION AND CONNECTION INFO TO SERVER (C-C-C)



5. SERVER PATCHES CORRECT SYSTEM AND DISCONNECTS HELPER



6. USER CAN USE SERVER 2, HELPER IS NOW FREE FOR ANOTHER USER



1. INTRODUCTION

C-C-C has presented a proposal, **Quotation No. Q 96446** REF:MSN1.DOC/PROPS 24 Sept. 1996. to for a video delivery system. It became apparent in the meeting that elements of the design and financial costs required clarification. These main topics are:

1. HFC's
2. General system specifications
3. ~~TV, Video Meeting at Residence~~
4. ~~Delivery schedules~~
5. ~~Encryption~~ Financial Considerations (by system).

The information supplied supersedes previously supplied information where a repetition occurs. This document as it contains full pricing against deliverables and anticipated timescales, should be used as the reference when placing an order. The reference number of this new document indicates that it is an amendment to the original and is therefore to be read in tandem with the original.

EXHIBIT 2

2. HPC's

2.1 Overview

The 'HPC's' [HPC's] section of the proposal required general and specific explanations. Before responding to the specific questions there follows a system description with diagrams then a 'Q&A' section.

2.2 System Description

HPC's are low specification PC's connected to the matrix switch and available so that users can gain access to servers without the use of a PC. Obviously a HPC is required for each simultaneous login session. The total number of HPC's required would never exceed the number of users, but if simultaneous login sessions for each and every user were require [assuming zero PC's at the desks] then a HPC for each user is required.

If there were less HPC's than users and all HPC's were in use then the user would not get a response from their keyboard keystroke until a HPC became free. It would be advisable to start with a ratio of five users to one HPC [i.e. 60 for 300 users with no PC's] and monitor user response times. If users started to complain about initial login response times then additional HPC's would be added with no modifications to the system [apart from extra input cards].

If a user has a PC at their desk then this is effectively the HPC running the same HPC application and no HPC for that user is required.

2.3 System Operation

In summary, if we have a system with 300 users [i.e. 300 video screens] with 150 of those having a PC at the desk, then a maximum of 150 HPCs would be required. If the switch had 700 server inputs then 850 server inputs would be required [700 server + 150 HPCs].

The whole purpose of the HPC is to provide some interaction between the user attempting to logon and the Hi-Res switch. *It is therefore only required or used when the user does not have access to a PC at his location.* C-C-C considers this as a valuable addition to the design and specification of the system. To explain the operation please consider the following for a user *without* a PC:

I. The system is idle. The user's keyboard, mouse and monitor are connected to the matrix switch, but the matrix switch has not connected the user through to a server's video. The user hits a key....

II. The keystroke activates the system and is passed through the matrix switch to the server. The server must now provide some sort of response...

III. In order to initiate a session with the user the user requires a video display on their screen. This video cannot be generated by the server because that has not yet been chosen. It is therefore generated by something else, the HPC.

IV. The next available HPC is connected by the server, through the matrix switch, to the user's screen. The user sees and interacts with the application running on the HPC. This is a C-C-C custom written program which enables the user (without access to a PC) to connect to the required server[s].

V. The application running on the HPC takes the form of a graphical representation of the whole system allowing users to easily chose their connections. These may be made automatically by the system manager, with access rights to server groups, for example.

VI. The user selects the required system, and the HPC sends the corresponding routing information to the C-C-C server through the LAN.

VII. The C-C-C server reconfigures the matrix switch and the user is then connected to the requested server[s]. The HPC connection is released ready for the next login request from another user.

2.3.1 Helper PC specification

The HPC only needs to run the custom C-C-C login application and communicate with the C-C-C server over the LAN. We suggest using a 486DX100, 8mbyte RAM, network boot and load or similar single card computer, mounted in a passive backplane chassis. Each chassis is 4U high holding 8 PCs and 8 network cards. For 160 HPCs we would require 72U of cabinet space [i.e. 18 chassis].

2.3.2 HPC Budget Cost

A budget cost for an HPC including amortized chassis cost and network card is approximately 1,400.00 pounds sterling.

2.4 Response Times - Keyboard/Mouse

The keyboard and mouse data are sent between the switch and the desktop using our standard FreeDesk protocol. This is 4800 baud, half duplex. This speed guarantees the same response time as a directly connected keyboard and mouse. This must be routed through the matrix switch with no degradation in throughput if we are to achieve the same response as a directly connected system. Since there are 64 users connected to a single high speed link [16:1 multiplex on the user card; 4:1 multiplex on the control card] then the bit rate of the high speed link must be at least 64*2400=153600. A slight reduction in response times would allow us a speed of 115200, which is a standard serial speed for a PC. This allows us to use standard serial port cards in the C-C-C server for keyboard monitoring.

2.5 HPC Questions Raised

The following are a list of questions raised concerning the HPC's. Each question is responded to individually.

Question 1

USER DOES NOT COMPLETE HIS LOGON SEQUENCE, LEAVING THE KEYBOARD HALFWAY THROUGH. IS THE HPC LEFT HANGING?

When the user is logging in he is running a custom C-C-C application which instructs the matrix switch. The matrix switch is controlled by the C-C-C server and this communicates with the application over the LAN. The choice of response if the user does not complete his logon is therefore entirely open to MSN. There will typically be a time-out on user response. When time-out occurs the application terminates and in doing so instructs the matrix switch [via the C-C-C server] to disconnect the HPC. The HPC is therefore not left hanging.

Question 2

HOW LONG WILL IT TAKE TO LOGON [IN SEC's]?

We envisage that a logon to be quite short. The user merely enters an agreed authorization code and selects, or be given, a server from a graphical map. The estimated window is between 10-20secs.

Question 3

WHAT FORMAT CAN THE LOGIN PROMPT TAKE, I.E. VISUAL BASIC & ETC.?

The login prompt can be anything that runs on the HPC, as simple or as complex [graphically] as we like. As it is a windows application it can be written in almost anything as long as it is Microsoft.

Question 4

WHAT GENERATES THE VIDEO?

The HPC generates the video, that is why it's required.

Question 5

ASSUMING 700 USERS, 20% WITHOUT A DESKTOP PC, WHAT IS YOUR ESTIMATION OF HPC QUANTITIES?

If we have 700 users, 20% without a desktop PC, then we would require a maximum of 140 HPC's ensuring that all users gain immediate access to an HPC regardless of loads. We suggest 20% of this number - 28 - and monitoring response times and load conditions. If chassis mounting PC's are used as HPC's then it would be advisable to have expansion capability in the chassis to facilitate an easy upgrade path for additional HPC's.

Question 6

WHEN USERS ATTEMPT TO LOGON AND THERE IS NO HPC, DOES THE USER RECEIVE A LOGIN SCREEN ENABLING HIM TO ENTER KEYSTROKES THAT ARE THEN BUFFERED UNTIL A HPC BECOMES AVAILABLE?

No. If the user attempts to logon and no HPC is available then the user will see nothing on his screen. It is the HPC that generates the initial video.

C-C-C

FACSIMILE MESSAGE

Date	29-9-96
Number of pages including cover sheet	6

TO:	John McDermott
Tel	688 1701
Fax	001 206 [illegible]
CC:	

FROM:	Phil Bates CCC Developments
Tel	01904431788
Fax	01904413710

REMARKS: ☐ Urgent ☐ For your review ☐ Reply ASAP ☐ Please Comment

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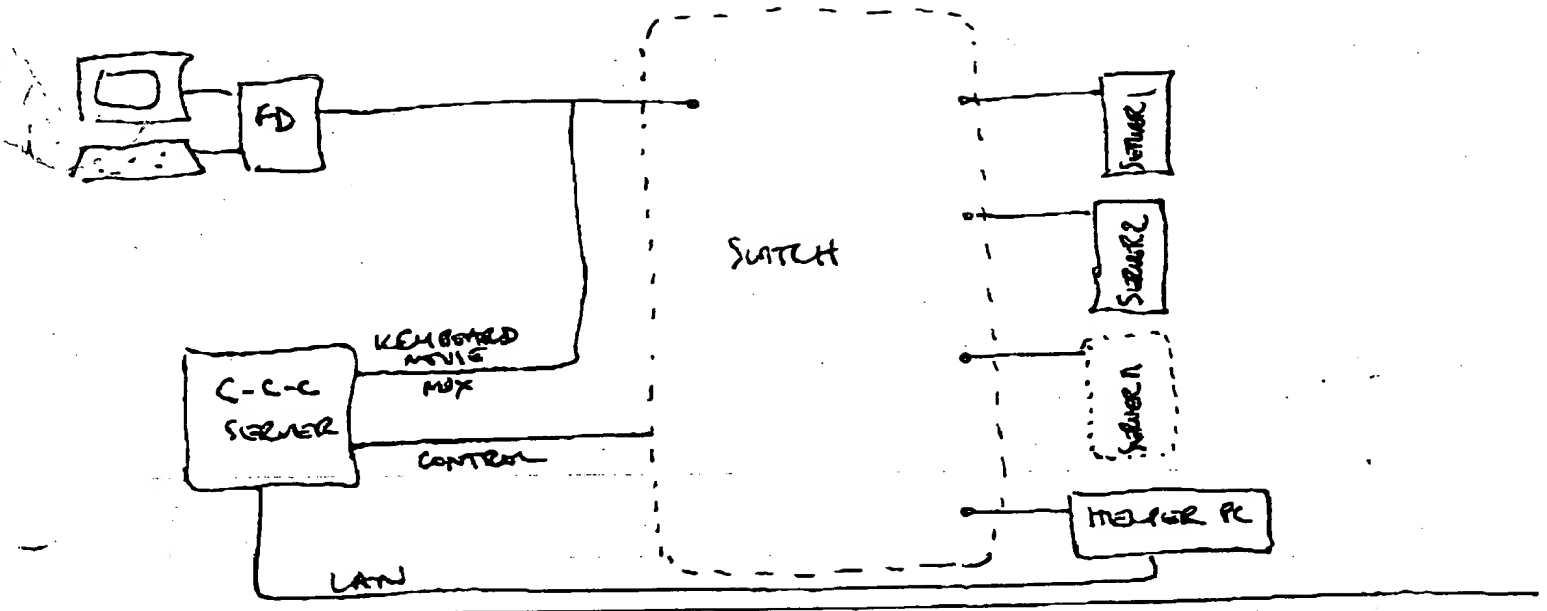
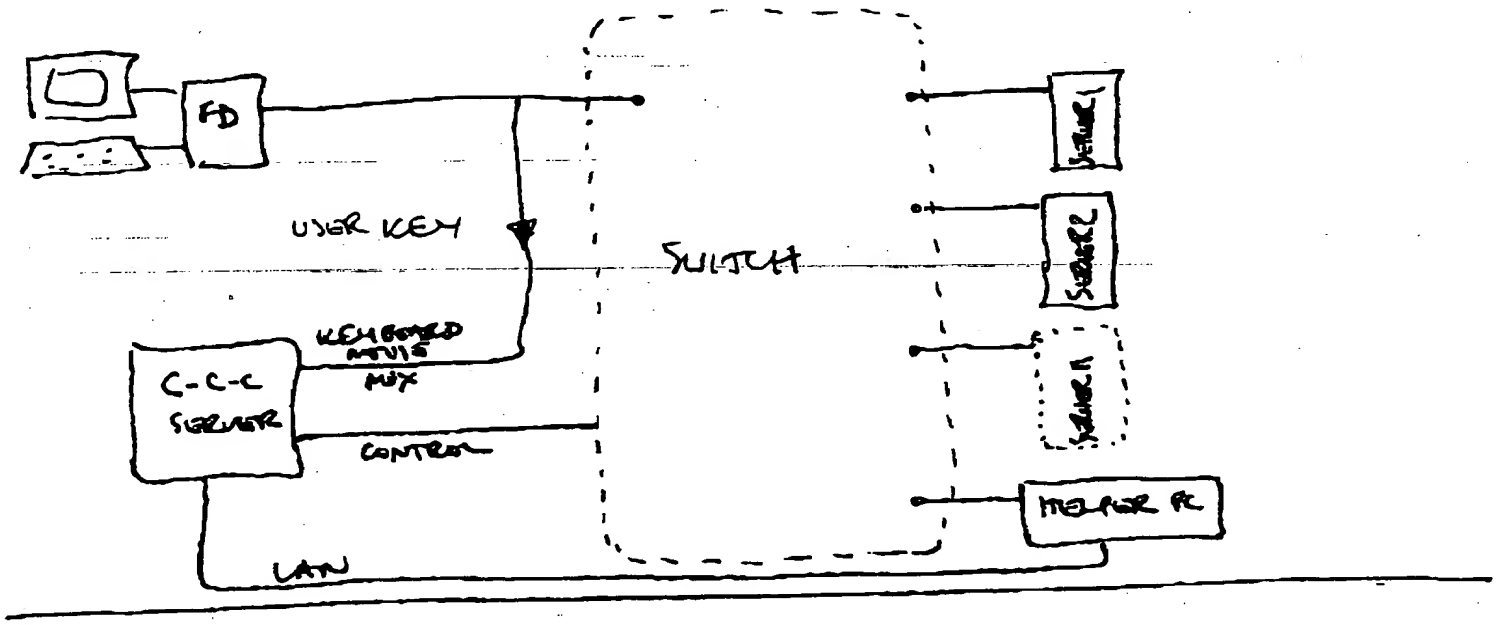
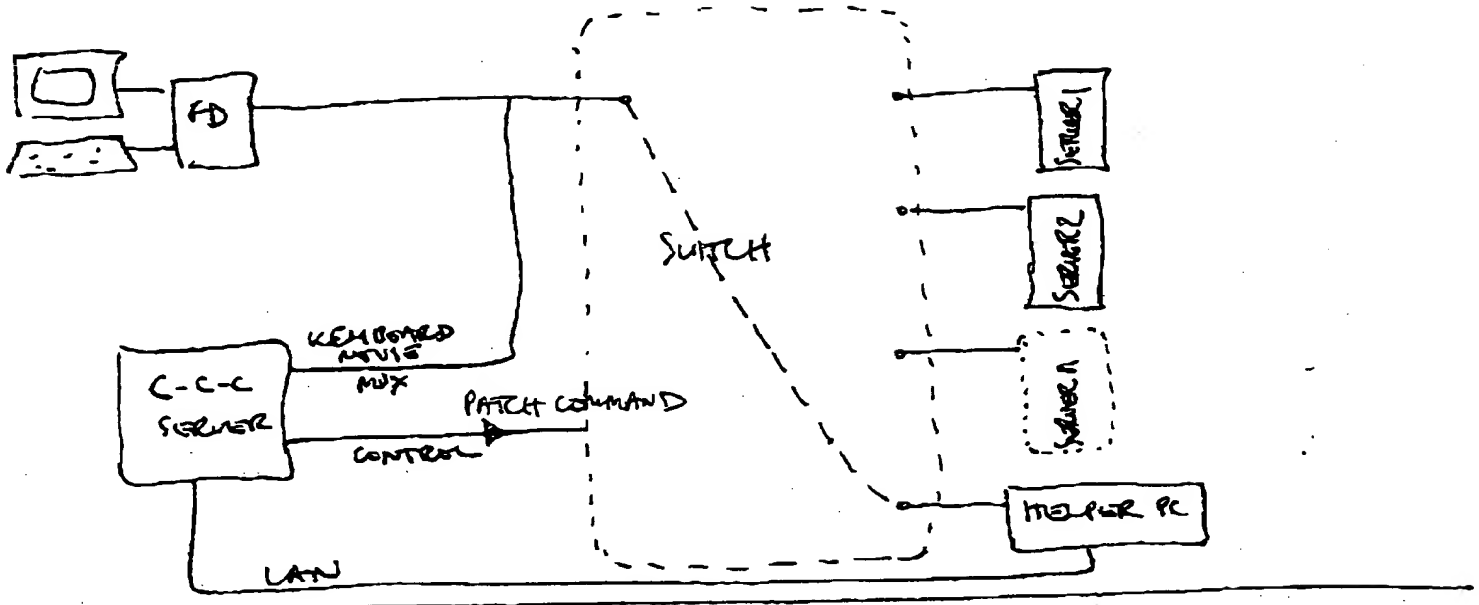


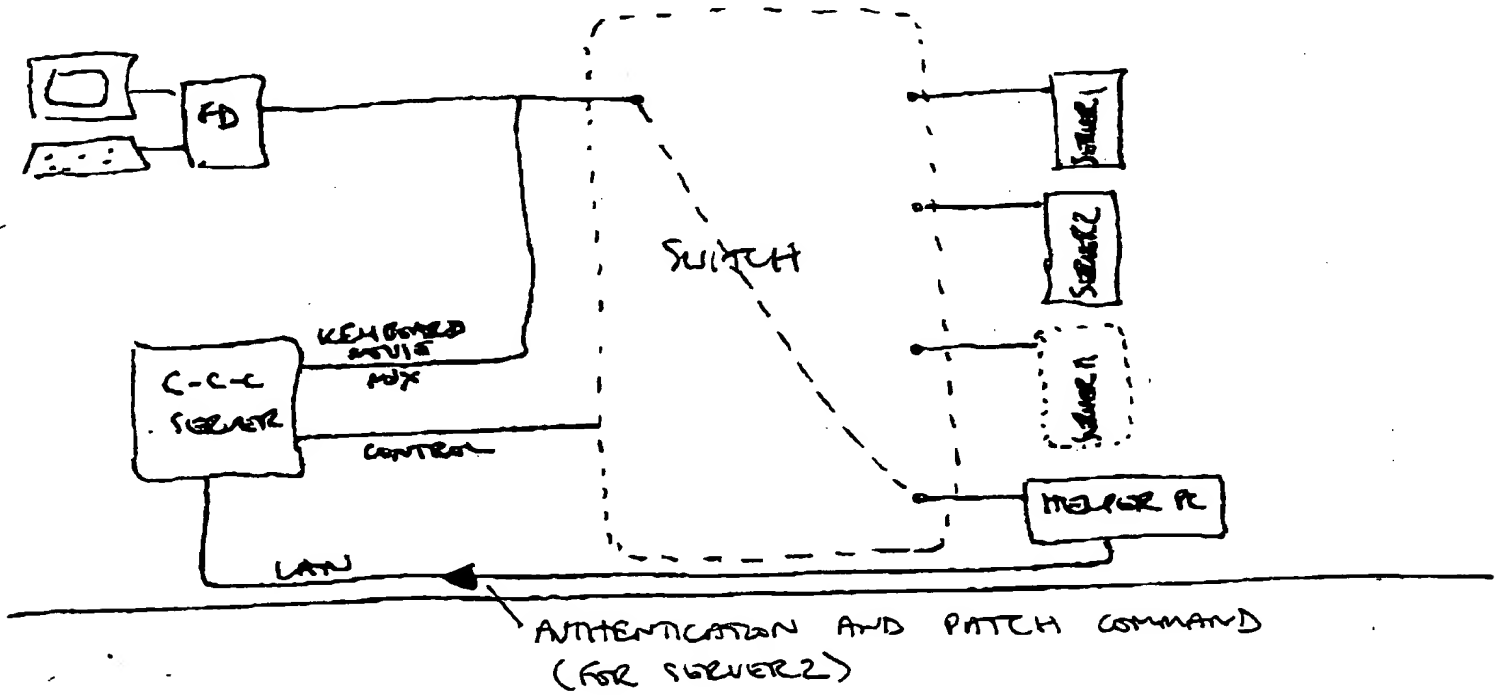
2) USER PRESSES KEY



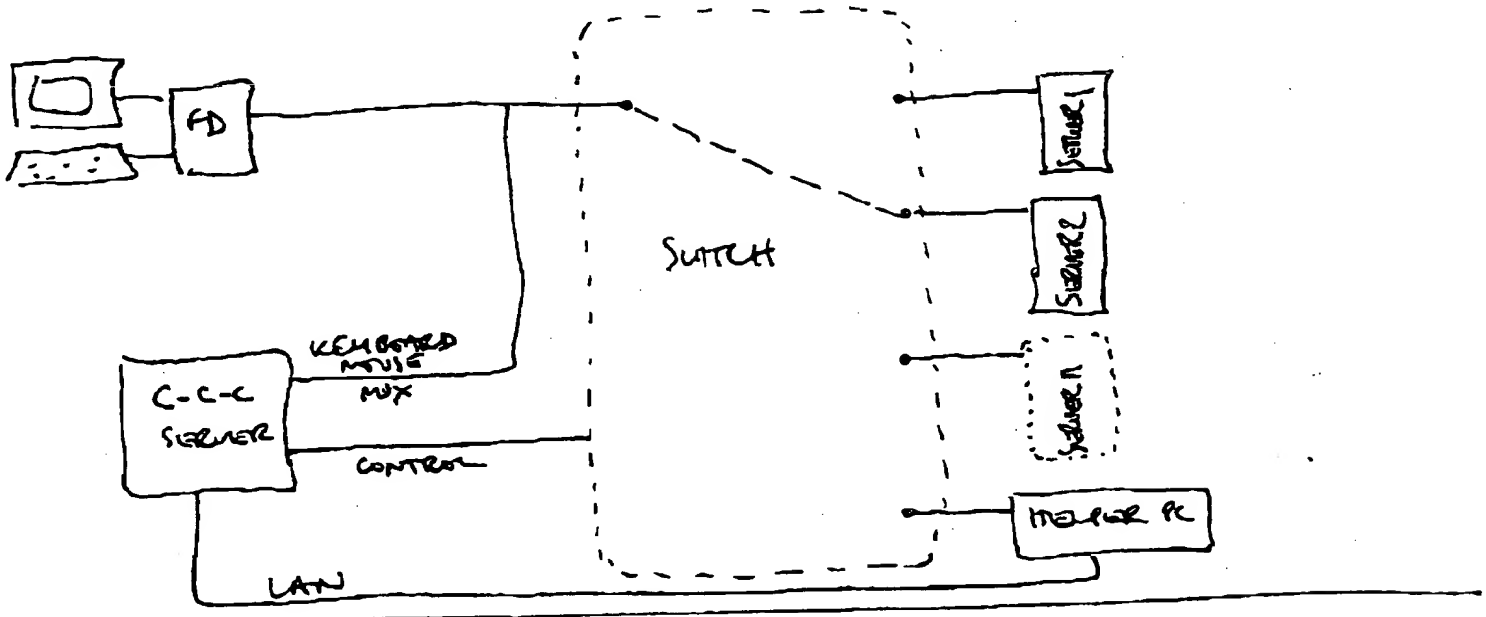
③ SERVER CONNECTS HELPER PC



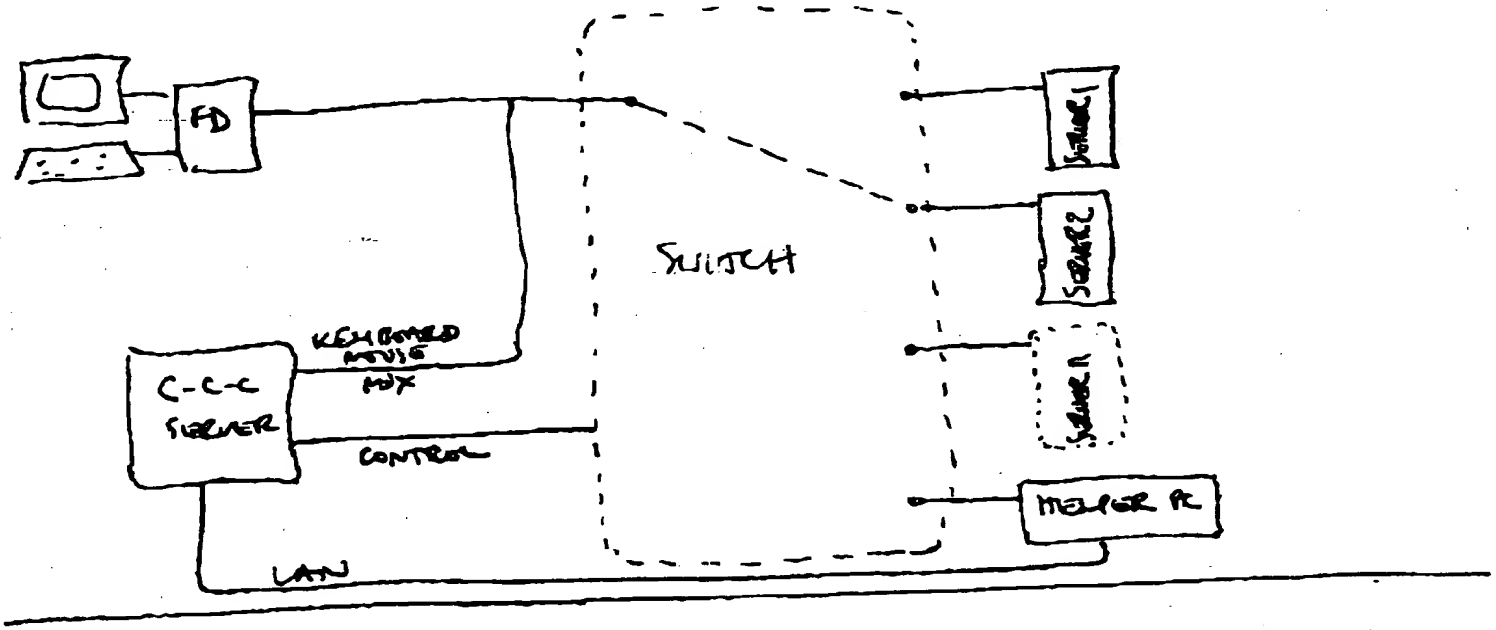
④ USER LOGS ON USING HELPER PC, HELPER SENDS AUTHENTICATION AND CONNECTION INFO TO SERVER (C-C-C)



⑤ SERVER PATCHES CORRECT SYSTEM AND DISCONNECTS HELPER



⑥ USER CAN USE SERVER 2, HELPER IS NOW FREE FOR ANOTHER USER



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4. ~~Delivery schedules~~
5. ~~Exact costings~~ Financial Considerations (by system).

The information supplied supersedes previously supplied information where a repetition occurs. This document, as it contains full pricing against deliverables and anticipated timescales, should be used as the reference when placing an order. The reference number of this new document indicates that it is an amendment to the original and is therefore to be read in tandem with the original.

EXHIBIT 2

2. HPC's

2.1 Overview

The 'HPC's' [HPC's] section of the proposal required general and specific explanations. Before responding to the specific questions there follows a system description with diagrams then a 'Q&A' section.

2.2 System Description

HPC's are low specification PC's connected to the matrix switch and available so that users can gain access to servers without the use of a PC. Obviously a HPC is required for each simultaneous login session. The total number of HPC's required would never exceed the number of users, but if simultaneous login sessions for each and every user were require [assuming zero PC' s at the desks] then a HPC for each user is required.

If there were less HPC's than users and all HPC's were in use then the user would not get a response from their keyboard keystroke until a HPC became free. It would be advisable to start with a ratio of five users to one HPC [i.e. 60 for 300 users with no PC's] and monitor user response times. If users started to complain about initial login response times then additional HPC's would be added with no modifications to the system [apart from extra input cards].

If a user has a PC at their desk then this is effectively the HPC running the same HPC application and no HPC for that user is required.

2.3 System Operation

In summary, if we have a system with 300 users [i.e. 300 video screens] with 150 of those having a PC at the desk, then a maximum of 150 HPCs would be required. If the switch had 700 server inputs then 850 server inputs would be required [700 server + 150 HPCs].

The whole purpose of the HPC is to provide some interaction between the user attempting to logon and the Hi-Res switch. ***It is therefore only required or used when the user does not have access to a PC at his location.*** C-C-C considers this as a valuable addition to the design and specification of the system. To explain the operation please consider the following for a user *without* a PC:

I. The system is idle. The user's keyboard, mouse and monitor are connected to the matrix switch, but the matrix switch has not connected the user through to a server's video. The user hits a key....

II. The keystroke activates the system and is passed through the matrix switch to the server. The server must now provide some sort of response...

III. In order to initiate a session with the user the user requires a video display on their screen. This video cannot be generated by the server because that has not yet been chosen. It is therefore generated by something else, the HPC.

IV. The next available HPC is connected by the server, through the matrix switch, to the user's screen. The user sees and interacts with the application running on the HPC. This is a C-C-C custom written program which enables the user [without access to a PC] to connect to the required server[s].

V. The application running on the HPC takes the form of a graphical representation of the whole system allowing users to easily chose their connections. These may be made automatically by the system manager, with access rights to server groups, for example.

VI. The user selects the required system, and the HPC sends the corresponding routing information to the C-C-C server through the LAN.

VII. The C-C-C server reconfigures the matrix switch and the user is then connected to the requested server[s]. The HPC connection is released ready for the next login request from another user.

2.3.1 Helper PC specification

The HPC only needs to run the custom C-C-C login application and communicate with the C-C-C server over the LAN. We suggest using a 486DX100, 8mbyte RAM, network boot and load or similar single card computer, mounted in a passive backplane chassis. Each chassis is 4U high holding 8 PCs and 8 network cards. For 140 HPCs we would require 72U of cabinet space [i.e. 18 chassis].

2.3.2 HPC Budget Cost

A budget cost for an HPC including amortized chassis cost and network card is approximately 1,400.00 pounds sterling.

2.4 Response Times - Keyboard/Mouse

The keyboard and mouse data are sent between the switch and the desktop using our standard FreeDesk protocol. This is 4800 baud, half duplex. This speed guarantees the same response time as a directly connected keyboard and mouse. This must be routed through the matrix switch with no degradation in throughput if we are to achieve the same response as a directly connected system. Since there are 64 users connected to a single high speed link [16:1 multiplex on the user card; 4:1 multiplex on the control card] then the bit rate of the high speed link must be at least 64*2400=153600. A slight reduction in response times would allow us a speed of 115200, which is a standard serial speed for a PC. This allows us to use standard serial port cards in the C-C-C server for keyboard monitoring.

2.5 HPC Questions Raised

The following are a list of questions raised concerning the HPC's. Each question is responded to individually.

Question 1

USER DOES NOT COMPLETE HIS LOGON SEQUENCE, LEAVING THE KEYBOARD HALFWAY THROUGH. IS THE HPC LEFT HANGING?

When the user is logging in he is running a custom C-C-C application which instructs the matrix switch. The matrix switch is controlled by the C-C-C server and this communicates with the application over the LAN. The choice of response if the user does not complete his logon is therefore entirely open to MSN. There will typically be a time-out on user response. When time-out occurs the application terminates and in doing so instructs the matrix switch [via the C-C-C sever] to disconnect the HPC. The HPC is therefore not left hanging.

Question 2

HOW LONG WILL IT TAKE TO LOGON [IN SEC's]?

We envisage that a logon to be quite short. The user merely enters an agreed authorization code and selects, or be given, a server from a graphical map. The estimated window is between 10-20secs.

Question 3

WHAT FORMAT CAN THE LOGIN PROMPT TAKE, I.E. VISUAL BASIC & ETC.?

The login prompt can be anything that runs on the HPC, as simple or as complex [graphically] as we like. As it is a windows application it can be written in almost anything as long as it is Microsoft.

Question 4

WHAT GENERATES THE VIDEO?

The HPC generates the video, that is why it's required.

Question 5

ASSUMING 700 USERS, 20% WITHOUT A DESKTOP PC, WHAT IS YOUR ESTIMATION OF HPC QUANTITIES?

If we have 700 users, 20% without a desktop PC, then we would require a maximum of 140 HPC's ensuring that all users gain immediate access to an HPC regardless of loads. We suggest 20% of this number - 28 - and monitoring response times and load conditions. If chassis mounting PC's are used as HPC's then it would be advisable to have expansion capability in the chassis to facilitate an easy upgrade path for additional HPC's.

Question 6

WHEN USERS ATTEMPT TO LOGON AND THERE IS NO HPC, DOES THE USER RECEIVE A LOGIN SCREEN ENABLING HIM TO ENTER KEYSTROKES THAT ARE THEN BUFFERED UNTIL A HPC BECOMES AVAILABLE?

No. If the user attempts to logon and no HPC is available then the user will see nothing on his screen. It is the HPC that generates the initial video.